DERMALOG

Fingerprint Scanner ZF 1+
Verifying identity with match-on-card feature.

Federal Office
for Information Security

Certificate
according to Technical Guidelines of BSI

BSI-TR-03121

Certificate-ID:
BSI-K-TR-0272-2017

Outstanding Features

> Supports all MCU-based cards

> Additional liveness detection

> Excellent quality for both wet and
dry fingerprints

Key Benefit

The perfect solution for any authentication
system with integrated fingerprint biometrics
based on smart cards.

ZF1+ Smart Card Reader – Verifying Identity by Fingerprint and MCU-Based Card.

The perfect solution for any authentication system with integrated fingerprint biometrics based on smart cards.

DERMALOG's ZF1+ Smart Card Reader extends the outstanding qualities of the DERMALOG ZF1 fingerprint scanner – combining a space-saving design with easy handling. The self-explanatory ZF1+ guides users how to place their finger in the correct position automatically. Furthermore, the ZF1+ recognizes and captures wet and dry fingerprints flawlessly.

Fingerprints
The optical scanner provides a 500 dpi fingerprint image (PIV and BSI-TR-03121 certified). Due to the automated fingerprint optimization, results are fully applicable even in poor conditions (in case of both wet and dry fingerprints).

Liveness Detection
High security is ensured by the latest liveness detection technology. Exclusive security features detect fake finger-prints or manipulation.

Product Features

> Supports all MCU-based cards (Micro Controller Unit)

> Excellent quality for both wet and dry fingerprints

> Robust against interfering light sources

> High quality fingerprint images – no reference images required

> No initialization required – for fast capturing

> Liveness detection to prevent attacks using fake fingers (optional purchase)

> Easy to use fingerprint capturing

> Durable platen glass and a rugged scanner surface

Ease of Use

The device combines usability with easy handling. The self-explanatory ZF1 design guides users in an intuitive way how to put the fingers on the scanner correctly.

Smart Card Reader

Once the card holders' fingerprints are captured and saved on the smart card, they can easily identify themselves as the legitimate owners by putting the card into the reader and their finger on the fingerprint scanner.

Certified Image Quality

The German Federal Office for Information Security has certified the DERMALOG ZF1+ fingerprint scanner according to the BSI-TR-03121 standard since it is used for storing information in German ePassports. The ZF1+ furthermore meets the criteria of AFIS Image Quality Standard Appendix F.

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Specifications **Fingerprint** Scanner **ZF1+**Smart Card Reader

Technical Features

Fingerprint scanning window size	25 mm × 18 mm
Optical scanning area	24.4 mm × 16.3 mm
Image resolution	480 × 320 pixels, 500 dpi
Bit Depth	8 bit, 256 gray levels
Raw fingerprint image file size WSQ compressed	Approx. 160 kByte Approx. 18 kByte
Interface	USB 2.0 high-speed with 1.8 meters standard USB cable
Dimensions (H × W × D)	60 mm × 99 mm × 49 mm
Weight (including USB cable)	235 g
Operating temperature	-10 °C to +55 °C (14 °F to 131 °F) at a humidity of 20-75% non-condensing
Storage temperature	-10 °C to +60 °C (14 °F to 140 °F) at a humidity of 10-90% non-condensing
Light source	Infrared light-emitting diode (LED)
Supply	DC 4.5-5.5 V / 200 mA (USB powered)
Certificates	CE, BSI-TR-03104, FBI-PIV, FCC Part 15 Subpart B Class A

Smart Card Reader

Standard/certifications	ISO 7816-1/2/3, PC/SC, EMV 2000, CCID, WHQL
Supported card types	5 V, 3 V, and 1.8 V smart cards
Supported protocols	T=0, T=1

SDK Features

NIST quality check	NFIQ 1.0: calculation of the NIST quality from a given image. The quality is calculated in the NRQ range from 1 (good quality) to 5 (bad quality) using the official NIST standard
	NFIQ 2.0: calculation of the NIST quality from a given image. The quality is calculated in the NRQ range from 100 (good quality) to 0 (bad quality) using the official NIST standard
WSQ compression	FBI-certified
Operating systems	Windows, Linux, Android

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